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# LEPROSY AND HAWAIIAN ANNEXATION.

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THE proposed annexation of the Hawaiian islands by the United States has excited a general interest in everything relating to these islands and their inhabitants. Their maritime importance to this country and the advantages which would follow annexation from a commercial standpoint have been fully set forth, but the sanitary aspects of the scheme have received no attention. When it is considered that more than ten per cent. of the Hawaiian race are affected with leprosy it becomes a serious question as to what will be the effect of the absorption of this tainted population upon the health interests of this country.

Incidentally it may be said that the history of the Hawaiian people furnishes many facts worthy of careful study by the student of sociology as well as the medical man. It presents the picture of a people, *facile princeps* among the Polynesian races, by their fine physical qualities and superior intelligence, inhabiting a group of beautiful islands—the “Paradise of the Pacific”—with a delightful climate and productive soil, surrounded by conditions most favorable for life, yet dying at a rapid rate. Civilization seems to have acted as a blight upon this people; under its withering touch they have dwindled by thousands each decade until now they number less than one-tenth the original population. At the time of Captain Cook’s visit (1779) he estimated the population at nearly half a million. In 1823 it had decreased to 142,000; in 1853 the census showed 73,000, in 1873 56,000; in 1893 the native population did not exceed 35,000. No unfavorable influence of soil or climate or hardship can be invoked in explanation of the decay and death of the native race. It is not the outcome of a contest between a savage and a civilized race in which the weaker succumbs to the stronger, as exemplified

in the case of the North American Indian. It is not the result of a struggle for existence, since there can be no competition for subsistence in a land where nature is kindly and bountiful, and furnishes a supply of easily procured food sufficient for the needs of all. Under the same conditions which have led to the depletion of the Hawaiian race, and which threaten its ultimate extinction, the foreign races that have settled here have flourished and multiplied.

The causes which have led to the native depopulation are of great interest from a demographic point of view. Prominent among these causes must be placed the introduction of diseases peculiar to civilization. The germs of disease transplanted to this virgin soil have flourished with a rank luxuriance unknown in older communities. Virginitv of soil, or lack of immunization, is recognized as a powerful factor not only in increasing susceptibility to disease but also in determining a special virulence and malignancy in its course.

The mortality from measles and whooping cough, introduced in 1849, was extraordinary, almost all of the cases terminating fatally. The ravages of small-pox introduced in 1853 were simply frightful; more than half the native population of Honolulu died from the disease. That this excessive mortality was largely due to the racial peculiarity of virginity of soil is evidenced by the fact that more recently, since the Hawaiians have acquired the partial protection of hereditary immunity, these same diseases no longer exhibit such a virulent type. It would be interesting to trace other factors in the depletion of the Hawaiian race, such as physiological peculiarities, the low birth rate, habits of living, etc., but want of space forbids. To the medical man the chief interest of these islands centers in leprosy, and it will be the object of this paper to give a brief account of the introduction of leprosy, its extraordinarily rapid spread, the measures adopted by the government for its suppression, and their results.

For the more intelligent comprehension of the lay reader, it may be well to begin with some general considerations respecting the nature of the disease, its communicability, etc. Leprosy is the most ancient and the most dreaded of all diseases; in the popular conception it represents the deepest dishonor that human flesh can suffer. The term "leprous" has crept into literature as expressive of all that is most foul, loathsome and unclean.

The popular horror of the disease is, perhaps, due not so much to a knowledge of its nature as to the harsh and cruel measures employed for its repression. The Levitical Code which decreed that the leper should be cast out of the city, stoned and driven away from the habitations of men, has, with some modifications, served as a model for sanitary laws in succeeding ages, although it must be admitted that such proscriptive measures are now carried out with more humanity and with a more intelligent discrimination than under the Mosaic dispensation. In the light of our present knowledge, it is evident that many simple cutaneous diseases, such as scabies, psoriasis, etc., were classed by the Jewish priests as leprosy.

For several centuries leprosy had practically disappeared from Europe and most civilized countries. When a leprous center was discovered in Norway about 50 years ago, it had for medical men much the interest of a resurrected disease. To-day it is spread over more than one-fourth the habitable surface of the globe. The Hawaiian Islands have afforded a better field for the study of the disease than any leprous center in the world. Owing to its comparatively recent introduction, the influence of heredity, of contagion and other conditions which are factors in its propagation, may here be traced with comparative precision.

The facts of our knowledge of this disease may be briefly summarized. The active cause of leprosy is a specific micro-organism, the *bacillus lepræ*. The period of incubation varies from a few minutes to several years.

Two principal types or forms of leprosy that are recognized as the brunt of the disease is determined toward the skin or toward the peripheral nervous system. The first form is termed tubercular; the second, anæsthetic, or nerve leprosy. In the first form infiltrations occur in the skin, forming nodules or tubercles, which are especially prominent about the forehead, cheeks, and ears; later, these nodules break down, forming ulcerating sores, often they occasion pictures of horrible deformity. The tubercular form is the most severe and rapidly fatal; the average duration of life is from five to ten years. In the anæsthetic form the nutrition of the skin is interfered with from implication of the nerves, leading to contractions and deformities of the members; not infrequently there is marked mutilation from the sinking in of the nose, the loss of the sight, and the

dropping off of the fingers and toes, so that only the stumps of the hands and feet remain. In this form the course of the disease is slower, and life may be prolonged to ten or fifteen years, or longer. Some patients exhibit the characteristics of both forms (mixed leprosy).

Leprosy is an exclusively human disease; it is not inoculable to animals. It is never of spontaneous origin, but is invariably derived from the lesions or secretions of a person similarly diseased. Its development in a country previously exempt from the disease may always be traced to its importation in the person of a leper from an infected center. We know nothing definitely of the mode of infection or the channels of entrance through which the bacillus gains access to the organism—whether by direct contact, by inhalation or imbibition of the germs, or by other intermediaries. Observation proves conclusively that every leper is a possible source of danger to all with whom he may come into intimate and prolonged contact.

That leprosy is a contagious, or rather a communicable disease, there is the most abundant and conclusive proof. Upon no other possible ground can be explained its remarkably rapid dissemination in the Sandwich Islands. To heredity was formerly ascribed the principal *rôle* in propagating the disease, but a more careful observation of the facts shows that its influence is inconsiderable or *nil*. In the first place, most lepers are sterile, and their limited offspring can furnish only a small contingent of the new cases, and in the next place it has been found that the children of lepers removed from contact with their parents rarely develop the disease.

The most incontrovertible evidence of the communicability of the disease is found in the fact that many foreigners coming from countries where leprosy is unknown, and whose antecedents are free from any possible leprous taint, have fallen victims. The numbers of such cases is by no means inconsiderable, and will be again referred to in connection with the foreign element in the leper colony of Molokai.

The history of leprosy in the Sandwich Islands covers a period of about one-half a century. The tradition among the natives is that it was introduced by the Chinese, and it has always been called by them the Chinese disease (*mai paka*). According to the most authentic records, the first case recognized among the

natives was about 1848. In 1863 the health authorities became alarmed at the rapid spread of the disease in the islands, and in 1865 the Legislative Assembly passed a law entitled "An act to prevent the spread of leprosy," which provided for the gathering together of all the lepers of the kingdom with a view to their isolation and treatment. The execution of this act was entrusted to the Board of Health. A hospital for the reception and examination of the lepers was established at Kalihi, near Honolulu, in November, 1865, and later a portion of the island of Molokai was purchased by the government to be used as a leper settlement, which was opened January, 1866. Within the first three months, 174 lepers were sent to the settlement. Since its establishment about 5,300 lepers have been received, of whom over 4,000 have died, leaving about 1,250, on January 1, 1897.

The method adopted by the sanitary authorities in dealing with leprosy is as follows. There are about twenty government physicians established in the various districts whose duty, in addition to providing for the wants of the sick poor, is to report all suspected cases of leprosy. The police officers are empowered to bring every suspected leper to the Kalihi reception hospital for examination. The examination takes place under the supervision of a board of three physicians who are selected for their especial fitness for this task. The patients are examined separately by each physician, who records his opinion. According to the verdict of the examining board the person is declared *clean*, a *suspect*, or a *leper*. Those in the first category are discharged, the suspects are kept under surveillance until either the suspicious symptoms have disappeared, or unmistakable signs of leprosy are manifest. The pronounced lepers are kept secluded and forwarded by the next boat to the leper settlement to remain there until they die.

The site chosen for the leper settlement is admirably adapted for the purpose in view. The northern shore of the island of Molokai rises abruptly to a height of from 2,000 to 4,000 feet, forming a continuous stretch of "pali" or precipices. At one point from the base of this precipitous coast-line a cape or tongue of land projects into the sea. Upon either side of this horseshoe-shaped cape are the two villages Kalawao and Kalapaupa, which, with the scattered cottages intervening, form the leper settlement. Surrounded on three sides by the ocean and walled in

behind by the pali, it combines the security of a prison with the advantages of a sanitarium. There are nearly 700 buildings in the settlement, 380 of which belong to the Board of Health, and about 300 are owned by the lepers. There are two Catholic churches, two Protestant, and one Mormon church. The Bishop home for leper girls, under the charge of the St. Franciscan Sisters, is situated at Kalapaupa. The Baldwin home for leper boys, under the care of [Brother Joseph Dutton and his assistants, a hospital and dispensary, the house of the resident physicians, and other government buildings, are located at Kalawao.

Habitations for the lepers as well as supplies of food and clothing are furnished by the government. It will thus be seen that every provision is made for the material as well as the spiritual wants of these doomed creatures. In no other country are lepers treated with so much humanity and even liberality. One-tenth of the entire annual revenues of the government has for years been devoted to the Health Department. "Over two-thirds of all moneys expended by the Health Bureau is directly spent for the segregation and support of lepers and one-half of the remaining expense is indirectly caused by the presence of leprosy." Notwithstanding the generous provision made for the support of lepers, few of them live long to enjoy it. In the first years of the establishment of the settlement the great majority of lepers died within three years of their arrival, or from the fourth to the sixth year; not 10 per cent. lived longer than the eighth year. More recently the virulent type of the disease has been modified, or rather the milder anæsthetic type predominates and the average duration of life is longer. Still, none of them recovers; they are sent here to die, and sooner or later they fulfil their sad destiny.

We may now inquire what has been the result of thirty years' crusade against this gigantic evil, which is slowly sapping the life-blood of the Hawaiian people. Is leprosy on the increase or is it in process of extermination? Taking the records of the leper settlement as a basis of comparison, there would seem to be no hopeful signs of its extinction. In the first twenty years of its establishment to January 1, 1886, 3,076 lepers were sent to the settlement; in the next ten years 2,049 were admitted. This large increase of admissions may not be due to an actual increase in the number of lepers in the islands, but to more

active and vigorous methods of segregation. Again in the first-mentioned period the number of lepers at the settlement ranged from two to eight hundred, the average being about 500. In recent years the number has varied from 1,000 to 1,200. This large excess is explained by the health authorities on the ground that lepers are now sent here at an earlier stage of the disease and live longer than formerly. The annual death-rate among the lepers, which was formerly from 20 to 25 per centum, has been reduced to from 13 to 15 per centum.

As bearing upon the question of the increase or decline of leprosy, it is interesting to compare the opinions of the government physicians, which appear in the last report of the Board of Health. A few of them assert that there is "as much leprosy as ever"; most of them, however, sound a more hopeful note and declare that there are very few or no known cases of leprosy in their respective districts. Notwithstanding this optimistic view, the fact remains that the annual consignment of lepers to the settlement shows little diminution in number. This yearly increment of fresh admissions which goes to recruit the ranks of the rapidly dying population of Molokai is made up of previously undiscovered cases. All the indications point to the existence of a vast deal of latent leprosy, which, as the disease develops into a recognizable form, must continue for many years to come to furnish a constantly recurring series of subjects for the leper colony.

Finally, there remains to be considered the practical question of the danger to the health interests of this country involved in Hawaiian annexation. In addition to the 1,200 or more lepers at Molokai there are probably two or three times as many at large in whom the disease is latent, or in the incubative stage, yet none the less sure to develop. Each of these lepers carries with him the seeds of a deadly contagion. If it were a question of the transportation of this mass of infectious material into our midst there could be no doubt of the imminence of the danger. There is little ground, however, for apprehension on this score. The Hawaiian is essentially insular in his tastes and habits and shows little disposition to leave his native shores. It is probable, however, that with the relaxation of our strict quarantine regulations on the Pacific coast, which may be assumed would follow annexation, many lepers would, in their desire to escape Molokai,



emigrate to this country. The principal danger would come from the establishment of more intimate commercial relations, the opening up of new enterprises, inviting capital and labor and, consequent thereon, the influx of Americans into the islands and their exposure to contact with the tainted population. That such contact is not devoid of danger is evident from the number of foreigners who contract the disease. Dr. A. Mouritz, formerly resident physician of the leper settlement, writes January 1, 1897: "Year in and year out the lepers at the settlement average between 1,100 and 1,200, chiefly Hawaiians, but within the past year or two the disease is making among the foreigners here (white people) considerable inroads."

Leprosy is no respecter of persons or nationalities. In the first 20 years of the leper settlement, among the 3,076 admissions there were 22 Chinamen and 16 whites, about one per cent. Within the past 10 years the number of foreigners has averaged from 3 to 5 per cent. Thus in the last biennial report of the Board of Health, January 1, 1896, it appears that of the 1,087 lepers at the settlement there were 974 Hawaiians, 61 half-castes, 3 foreign parentage, 29 Chinese, 6 Americans, 5 British, 1 German, 4 Portuguese, 1 Spanish, 1 Russian, 1 Negro, 1 South Sea Islander. Exclusive of the half-whites, about five per cent. were foreigners. The statistics of the leper settlement by no means convey a fair indication of the actual number of foreigners who have contracted the disease. While the Board of Health assumes to act impartially in consigning to Molokai all lepers who come within its jurisdiction, irrespective of nationality, it is well known that foreigners are given the privilege of leaving the country, so that as a rule only the poorer and more destitute are committed. Besides, it has been the policy of the Board to return to their own country, when practicable, the Chinese and Japanese laborers who become lepers. Many foreigners learn the nature of their disease from their own physicians and voluntarily return to this country or Europe for treatment. A number of such cases have come under my personal observation.

In the event of annexation, it would be idle to think of confining leprosy to the islands, or rather excluding it from this country by quarantine measures. In its earlier stage leprosy defies detection, and no system of quarantine has ever been devised which would exclude the importation of a disease so lit-

tle manifest on ordinary inspection as leprosy; only the more advanced cases could be detected. There would seem to be no reasonable doubt that the annexation of Hawaii would create conditions favorable to the dissemination of the seeds of leprosy in this country. But for the propagation of a disease a suitable soil is an essential factor, and the question is whether the conditions of soil found here are favorable to the germination and growth of the seed. Upon this point the teachings of observation and experience throw a valuable light. Just as in the case of tuberculosis, with which leprosy presents many analogies, we find that climatic and other conditions exert a marked inhibitory influence upon its development. In the dry, cool climate of our Northwestern States, for example, leprosy does not appear to take root and flourish, but rather to die out from natural causes. Thus the 160 Norwegian lepers who years ago emigrated to this country and settled in the various Scandinavian colonies of the Northwest have not propagated the disease. It has practically died out with the death of its victims, and no new case has been traced to association with them. On the other hand the warm, moist, more tropical climate of our Southern seaboard seems favorable to the development of leprosy. There is a large number of lepers at Key West. In Louisiana there has been a notable and alarming increase of leprosy within the past few years. Dr. Blanc and Dr. Dyer, of New Orleans, have recently reported more than 150 cases as coming under their personal observation. Twenty-five years ago the disease was limited to a few cases in the Têche River district and was supposed to be practically extinct. Its recent remarkable outbreak proves that here, at least, given the seed, the conditions are favorable to its development.

Experience shows that in all countries where leprosy has become epidemic its advance is insidious; it spreads slowly, and before the health authorities awaken to the realization of the danger it has made such headway that its further progress cannot be arrested. All of these facts should be carefully considered and their importance from a sanitary point of view carefully weighed by our legislative authorities before deciding upon the annexation of Hawaii with its leprous population.

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